

# **Request for Best and Final Proposal**

for Design-Build Construction of  
**Thurston Way Interchange**  
SR 500 MP 3.15 to MP 4.73

CLARK COUNTY

F.A. PROJECT NO. NH-0500(005)



**Washington State  
Department of Transportation**

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**SECTION 1300 PRODUCT WARRANTY PROVISIONS**

The Design-builder shall warrant the new pavement sections for the mainline and ramps.

**1310 General**

The Design-Builder shall furnish, as part of the BAFP, a letter signed by an authorized representative stating that the Design-Builder shall warrant materials, work, and performance as described by this specification. The Design-Builder shall be responsible for the pavement performance and warranty work for a period of five years following final acceptance of the project by WSDOT. The term Final Acceptance as used in this specification does not include the warranty period.

Upon final acceptance of the project, the necessary warranty bond for the pavement item(s) shall be in effect for the total five year warranty period. The warranty bond shall be in the amount of \$200,000. The bond shall insure the proper and prompt completion of required warranty work following completion of the pavement, including payments for all work performed, equipment and materials used in accordance with this specification. The extent of warranty work and the Design-Builder's liability for the work that may be required by these warranty provisions is not limited by the warranty bond amount.

The warranty bonds shall be one of the following:

- A. A single term five year warranty bond that will be in effect for the entire warranty period
- B. Certification from the Design-Builder and its bonding agency that the contract bond for the project will remain in effect for a period of one year beyond final acceptance of the project and will include warranty work as described herein. Warranty bonds extending beyond that period will be supplied by the Design-Builder. The Design-Builder will provide a two-year renewable, non-cumulative warranty bond for two consecutive terms. Failure on behalf of the Design-Builder or its surety to renew this warranty bond will result in a 20% payment of the face amount of the contract bond to WSDOT and the Design-Builder shall be considered in default.

**1320 Performance**

The parameters that will be used by WSDOT to evaluate performance of all constructed pavements for this project are ride quality, pavement friction, pavement surface condition, structural capacity and material quality. These parameters will be measured and evaluated by WSDOT after construction, annually (February through May) and prior to expiration of the warranty period. WSDOT will supply the Design Builder, in writing, the results of the pavement condition survey within 30 days of survey completion.

At least 60 days prior to the expiration of the warranty or at any time deemed necessary by the Engineer, the Engineer will notify the Design-Builder in

## Scope of Work

writing if the pavement distress exceeds the criteria outlined in Tables 2 or 3 below, as applicable. The Design-Builder will not be held responsible for distresses that are caused by factors beyond the control of the Design-Builder. A finding that the distress is due to factors outside the control of the Design-Builder shall be based on evidence submitted by the Design-Builder to the Engineer. If the Engineer does not agree with the Design-Builder then the Dispute Resolution provisions as outlined in Special Provision Section 1-04.5 will be followed.

Within 45 days of receiving notice, the Design-Builder shall commence to undertake the warranty work, submit a plan for completing the work within the following nine months, and/or provide written objection if the need for warranty work is contested. Disagreement between the Design-Builder and the Engineer shall be resolved in accordance with the dispute resolution provisions as outlined in Special Provision Section 1-04.5. If the Design-Builder fails to undertake warranty work within 45 days after receiving written notice from the Engineer or Dispute Resolution Team, WSDOT will complete the warranty work or contract to have it completed and the Design-Builder shall be responsible for the total cost of the warranty work.

Coring, milling, or other destructive procedures may not be performed by the Design-Builder, without prior consent of the Engineer. The Design-Builder will not be responsible for damages as a result of coring, milling or other destructive procedures conducted by WSDOT, utility companies or other entities not under the control of the Design-Builder.

All repair, maintenance, and warranty work performed as part of this warranty provision, except as excluded elsewhere in this provision, shall be covered by the warranty provision for the remainder of the warranty term.

During the warranty period, the warranty work shall be performed at no cost to WSDOT. Maintenance (elective and preventative action) work that the Design-Builder elects to perform during the warranty period shall be at no cost to WSDOT. If corrective action needs to be taken, the Design-Builder shall coordinate all such activities to minimize disruption to the traffic, with prior approval of WSDOT.

Maintenance or Warranty work that requires a resurfacing of the pavement shall not be performed later than October 15 without written approval from the Regional Administrator. In addition, asphalt concrete shall not be placed on any wet surface, or when the average surface temperatures are less than those specified in Table 1, below, or when weather conditions otherwise prevent the proper handling or finishing of the bituminous mixtures:

<b>Table 1 AC Placement</b>		
Compacted Thickness (ft)	Surface Course Temperature	Sub-Surface Course Temperature
Less than 0.10	55°F	55°F
0.10 to 0.20	45°F	35°F

0.21 to 0.35	35°F	35°F
More than 0.35	DNA	25°F*

\* Only on dry subgrade, not frozen and when air temperature is rising.

## **1330 Asphalt Concrete Pavement**

### **1330.01 Ride Quality**

Baseline measure of the International Roughness Index (IRI) will be conducted using WSDOT's South Dakota Type Profiler. Ride quality will be evaluated using WSDOT's South Dakota Type Profiler, and as follows:

- A. The requirement for final acceptance will be a ride quality value of less than 60 inches per mile. If this limit is exceeded the Design-Builder shall replace the defective pavement (minimum depth of 0.15 ft.) for the full lane width over the section at the Design-Builder's expense.
- B. The ride quality value at the end of five years following project completion shall not exceed 95 inches per mile. If this criterion is not met, the Design-Builder shall take corrective action as indicated above to bring this parameter within the limits.

### **1330.02 Pavement Friction**

Pavement friction shall meet the following performance criteria:

- A. The requirement for final acceptance is a friction number greater than 50. Pavement exhibiting values less than 50 will require corrective action to provide values that exceed 50.
- B. The friction value at the end of five years after the project has been completed shall be no less than 40. Pavements with a friction number less than 40 will require corrective action within six months. If at any time during said five-year period WSDOT determines, in accordance with ASTM E274-90, that this criterion is not met, upon receipt of notice to such effect from WSDOT, the Design-Builder shall take corrective action to provide values that meet or exceed 40, within six months after receipt of the notice.

### **1330.03 Pavement Surface Condition**

Pavement surface condition shall meet the following performance criteria:

- A. Final acceptance will permit no identifiable distress as defined by the WSDOT Pavement Surface Condition Rating Manual. If these criteria are not met, the Design-Builder shall take corrective action as outlined in Table 2.
- B. Distress types exceeding the allowable level of severity at the end of five years after Final Acceptance shall require corrective action as outlined in Table 2.

**1330.04 Structural Capacity**

The structural capacity (thickness, strength) of pavement sections shall be evaluated during the construction phase through the Design-Builder's approved QC/QA program. The parameters that will be evaluated include thickness, strength, and quality of materials. Load transfer capacity of new concrete pavements will be verified to comply with design assumptions. The strength, thickness, and quality of materials will be evaluated to ensure compliance with the approved design.

The requirement for final acceptance shall be to meet or exceed the design criteria.

**1330.05 Material Quality**

Material quality shall be evaluated prior to and during construction through the Design-Builder's approved QC/QA program. Materials specified in the design and meeting the requirements outlined in the Standard Specifications shall be evaluated to meet or exceed requirements. Materials not meeting these specifications shall be removed immediately and replaced with acceptable material.

**1340 Portland Cement Concrete**

**1340.01 Ride Quality**

A baseline measure of the International Roughness Index (IRI) will be conducted using WSDOT's South Dakota Type Profiler. Ride quality will be evaluated using WSDOT's South Dakota Type Profiler, and as follows:

- A. The requirement for final acceptance on newly constructed concrete pavement will be satisfaction of Standard Specification Section 5-05.3(12). If said criteria are not met, the Design-Builder shall diamond grind the profile back to acceptable limits provided the area requiring grinding does not exceed five percent of the surface area of a day's production and does not compromise the structural capacity of the section. If this limit is exceeded or the section thickness is reduced by more than five percent, the Design-Builder shall replace the defective pavement for the full lane width over the section at the Design-Builder's expense.
- B. The IRI value at the end of five years following Final Acceptance shall not increase by more than 25 percent from the IRI value determined after project completion. If at any time during said five-year period WSDOT determines that this criterion is not met, upon receipt of notice to such effect from WSDOT, the Design-Builder shall take corrective action as indicated above to bring this parameter within the limits.

**1340.02 Pavement Friction**

Pavement friction shall meet the following performance criteria:

- A. The requirement for Final acceptance is a friction value greater than 50. Pavement exhibiting values less than 50 will require corrective action to provide values that exceed 50.
- B. The friction value at the end of five years after the project has been completed shall be no less than 40. If at any time during said five-year period WSDOT determines, in accordance with ASTM D274-90, that this criterion is not met, upon receipt of notice to such effect from WSDOT, the D-B shall take corrective action to provide values that meet or exceed 40, within six months after receipt of the notice.

#### **1340.03 Pavement Surface Condition**

Pavement shall meet the following performance criteria:

- A. Final acceptance will permit no identifiable distress as defined by the WSDOT Pavement Surface Condition Rating Manual. If this criterion is not met, the Design-Builder shall take corrective action as outlined in Table 3.
- B. Distress types exceeding the allowable level of severity at the end of five years after Final Acceptance shall require corrective action as outlined in Table 3.

#### **1340.04 Structural Capacity**

The structural capacity (thickness, strength) of pavement sections shall be evaluated during the construction phase through the Design-Builder's approved QC/QA program. The parameters that will be evaluated include thickness, strength, and quality of materials. Load transfer capacity of new concrete pavements will be verified to comply with design assumptions. The strength, thickness, and quality of materials will be evaluated to ensure compliance with the approved design.

The requirements for final acceptance shall be to meet or exceed the design criteria.

If the structural capacity is determined to be deficient by WSDOT, the Design-Builder shall take corrective action to rectify the deficiency.

#### **1340.05 Material Quality**

Material quality shall be evaluated prior to and during construction through the Design-Builder's approved QC/QA program. Materials specified in the design and meeting the requirements outlined in the Standard Specifications shall be evaluated to establish that they meet or exceed requirements. Materials not meeting these specifications shall be removed immediately and replaced with acceptable material. WSDOT verification testing shall in no way relieve the Design-Builder of responsibility under this warranty.

#### **1350 Required Corrective Actions**

#### **TABLE 2. Required Corrective Actions for Pavement Distress Levels – Asphalt Concrete Pavements**

## Scope of Work

<b>Distress Type</b>	<b>Allowable Level of Severity</b>	<b>Allowable Extent of Severity</b>	<b>Corrective Action</b>
Rutting and Wear	Less 1/4 inch	Project length	Mill and fill with 2 inches of asphalt concrete pavement required
Alligator Cracking	Less than 1/4 inch	Less than ten percent of project length of both wheel paths	Pavement repair required
Longitudinal Cracking	Less 1/4 inch	Less than 100 percent of project length (single crack)	Crack seal required
Transverse Cracking	Less 1/4 inch	Less than 4 cracks per 100 feet	Crack seal required

1  
2



**TABLE 3. Required Corrective Actions for Pavement Distress Levels – New Concrete Pavement**

<b>Distress Type</b>	<b>Allowable Level of Severity</b>	<b>Allowable Extent of Severity</b>	<b>Corrective Action</b>
Cracking	One crack per panel	Less than ten percent of project length	Full depth repair required
Joint and Crack Spalling	Spalls less 1/4 inch wide	Less than ten percent of joints and cracks	Partial depth repair required
Pumping and Blowing	Slight shoulder depression, no staining	Less than ten percent of joints and cracks	Full depth panel replacement and repair of underlying base material required
Faulting	Less than 1/8 inch	Less than ten percent of joints	Diamond grinding back to zero tolerance without compromising pavement section. If the structural integrity of the pavement section is compromised then full depth slab replacement is required.
Patching	Less than ten percent of panel area is patched	Less than ten percent of all panels in travel lane are patched	Full depth panel repair required
Scaling	Pavement appears slightly rough	Less than ten percent of pavement surface	Diamond grinding back to zero tolerance without compromising pavement section. If the structural integrity of the pavement section is compromised then full depth slab replacement required.
Wear	Less than 1/4 inch	Less than ten percent of one lane mile	Diamond grinding back to zero tolerance without compromising pavement section. If the structural integrity of the pavement section is compromised then full depth slab replacement required.
Joint Seal Damage	Hardening, adhesive failure, cohesive failure, complete loss of sealant	Less than ten percent of joint length per one lane mile	Joint resealing required

